REMARKS

In section 4 of the Office Action, the Examiner

rejected claims 62, 70, 74, 75, 81-84, and 88 under 35

U.S.C. §103(a) as being unpatentable over Schumann in

view of Chen.

Applicants' Argument

Schumann shows in Figure 1 an on-screen display

system 100 having an OSD subsystem 102 and a video

display controller 108. The OSD subsystem 102 creates

pixel-based graphics. An MPEG-2 decoder 104 decodes

compressed MPEG-2 data as images for viewing on a display

110, and a converter 106 converts these images into bit

representations. The video display controller 108

creates the proper video signals, timing of image

display, and overlay of bit mapped data over the MPEG-2

images, and sends the output signal to the display 110.

As shown in Figure 2, a DVD player 202 receives

an MPEG-2 coded audio/video stream, applications, and

data from a disk (labeled as DVD in Figure 2 and as 204

in Figure 4), and displays still images and full motion

video on a television screen or monitor 206. The DVD

player 202 also receives user commands from a remote

control 208. These commands may be selected by a user

from menu items displayed on screen via MPEG-2 graphics.
Figure 3 shows an example menu.

Figure 4 shows a DVD player (confusingly
labeled 410 in Figure 4 and referred to in Schumann as a
set top box) that processes and decodes compressed MPEG
video image data. The DVD player has an input port 402
for receiving data from a DVD disc 204, an input port 404
for receiving control inputs from the remote control 208,
and an output port 406 for supplying an audio/video
output signal, fully MPEG-2 decoded, to the television
206.

The data from the DVD disc 204 is supplied from
the input port 402 to an application 408. A de-
multiplexer 416 de-multiplexes the DVD video data and the
DVD audio data. The DVD video data is applied to an
MPEG-2 decoder 412, and the DVD audio data is applied to
an audio decoder 410. The outputs of the audio decoder
410 (note that the reference numeral is used in Figure 4
for both the DVD player and the audio decoder) and the
and video decoder 412 supply the audio/video output port
406.

Control inputs at the input port 404 are also
supplied to the application 408.

The application 408 supplies program data, MPEG encoded I frames, Fonts, and MPEG graphics to an MPEG-2 graphics sub-system 414 that includes a memory. As shown in Figure 4, the memory of the graphics sub-system 414 stores MPEG encoded P frames, MPEG encoded I frames, and fonts in order to construct an output frame that is also supplied to the de-multiplexer 416.

As shown in Figure 9, an I-frame, representing background, is initially sent by the MPEG-2 sub-system 414 from the memory through the demultiplexer 416 to the MPEG-2 decoder 412. The MPEG-2 decoder 412 decodes the I frame and supplies the decoded I frame to the output port 406 for display by the television. A user input is received from the remote control 208. The MPEG-2 sub-system 414 selects an appropriate graphic in response to this input, replaces macroblocks in the I frame with the selected graphic, and sends this updated I frame to the MPEG decoder 412. The MPEG decoder 412 decodes this updated I frame and supplies the decoded and updated I frame to the output port 406 for display by the television.

Alternatively, as shown in Figure 10, an I-frame, representing background, is initially sent by the MPEG-2 sub-system 414 through the demultiplexer 416 to

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the MPEG-2 decoder 412. The MPEG-2 decoder 412 decodes the I frame and supplies the decoded I frame to the output port 406 for display by the television. A user input is received from the remote control 208. The MPEG-2 sub-system 414 selects an appropriate graphic in response to this input, builds a P frame using the selected graphic, and sends this P frame to the MPEG decoder 412. The MPEG decoder 412 decodes the P frame and sends the decoded P frame to the output port 406 for display by the television as an image overlaid on the I frame.

Independent claim 62 is directed to an MPEG on-screen display coder having a buffer, an MPEG encoder, and a multiplexer. The buffer receives and buffers an MPEG transport data stream containing frames of a selected program and frames of a non-selected program. The MPEG encoder encodes frames of the selected program with an on-screen display. The multiplexer selectively passes to a digital television receiver the frames of the non-selected program, the encoded frames of the selected program, and original frames of the selected program.

Schumann does not disclose the buffer of independent claim 62 because Schumann does not disclose buffering a transport stream containing both a selected

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program and a non-selected program, where the selected

program is to be MPEG encoded with an on-screen display.

Indeed, the MPEG-2 graphics sub-system 414 of Schumann

receives only a selected program (i.e., the program from

the DVD disc 204) and, therefore, cannot buffer both the

selected program and a non-selected program.

The Examiner argued in the previous Office

Action that Schumann inherently discloses a buffer.

First, Schumann does not inherently disclose a buffer.

Second, even if Schumann inherently discloses a buffer,

such a buffer would not, and could not, buffer a

transport stream containing both a selected program and a

non-selected program because no non-selected program is

received from the DVD disc 204.

Chen shows in Figure 4 two input streams that

are received by an insertion processor 400 of a digital

ad insertion module 300, a main stream that contains a

network television program, and an insertion stream that

contains an ad to be inserted into the main stream. As

shown in Figure 4, a buffer 480 buffers the main stream,

a buffer 490 buffers the insertion stream, and a buffer

485 combines the main stream and the insertion stream

(with null packets, if needed).

As can be seen, Chen does not disclose a buffer that buffers a transport stream that contains both a selected program and a non-selected program, where the selected program is to be MPEG encoded with an on-screen display.

Accordingly, even if Schumann and Chen could be combined, one of ordinary skill in the art would not combine them so as to meet the buffer limitation of independent claim 62.

Therefore, for this reason, independent claim 62 is not unpatentable over Schumann in view of Chen.

Moreover, Schumann does not disclose a multiplexer that selectively passes the frames of a non-selected program, the encoded frames of a selected program, and the original frames of the selected program. Indeed, Schumann does not disclose a non-selected program and, therefore, cannot disclose or suggest multiplexing the selected processed with the on-screen display with a non-selected program.

Chen likewise does not disclose a multiplexer that selectively passes the frames of non-selected and selected programs, where the selected program is to be MPEG encoded with an on-screen display.

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Accordingly, even if Schumann and Chen could be combined, one of ordinary skill in the art would not combine them so as to meet the multiplexer limitation of independent claim 62.

Therefore, for this reason also, independent claim 62 is not unpatentable over Schumann in view of Chen.

Furthermore, Schumann and Chen, whether taken alone or in combination, simply do not deal with the invention of independent claim 62. These references do not disclose or suggest buffering a transport stream containing a selected program and a non-selected program, encoding the selected program with an on-screen display, and then multiplexing the non-selected program and the encoded selected program.

Accordingly, even if Schumann and Chen could be combined, one of ordinary skill in the art would not combine them so as to meet the invention of independent claim 62.

Therefore, for this further reason, independent claim 62 is not unpatentable over Schumann in view of Chen.

Independent claim 88 is directed to an MPEG on-screen display coder having a demultiplexer, an MPEG

encoder, and a multiplexer. The demultiplexer demultiplexes frames of a selected video program from frames of a non-selected program in a transport stream. The MPEG encoder receives the frames of the selected program and processes these so as to encode frames with an on-screen display. The multiplexer multiplexes the encoded frames with the frames of the non-selected video program in the transport stream.

Schumann does not disclose the demultiplexer of independent claim 62 because Schumann does not disclose a transport stream containing a selected program and a non-selected program and, therefore, cannot demultiplex a selected program from a non-selected program. Indeed, the MPEG-2 graphics sub-system 414 of Schumann receives only a selected program (i.e., the program from the DVD disc 204).

The Examiner recognized in the previous Office Action that Schumann fails to disclose a demultiplexer. Therefore, the Examiner points to Chen and particularly column 9, lines 25-65 of Chen.

Column 9, lines 25-65 of Chen describes a processor 470 that processes the last packet before the splicing point and the first packet after the splicing point so as to provide a seamless transition that is MPEG

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compliant. Accordingly, at the beginning point of insertion, the processor 470 reads the last transport packet from the main stream before this point and the first packet from the insertion stream after this point, and repairs the syntax of these packets, if necessary, so that they are MPEG compliant. At the end point of insertion, the processor 470 reads the last transport packet from the insertion stream before this point and the first packet from the main stream after this point, and repairs the syntax of these packets, if necessary, so that they are MPEG compliant.

This portion of Chen then states that, in the event of a potential buffer overflow, a null packet generator inserts null packets into the output. A PSI/PID replacer 435 is provided to replace the PSI tables and PIDs of the inserted stream with those of the main stream. As described above, the buffers 480 and 490 buffer the main and insertion streams, respectively. The buffer 485 buffers common data such as PSI and null packets.

As can be seen, there is no demultiplexing described in this portion of Chen cited by the Examiner or in any other portion of Chen, and there is no

demultiplexing a selected program from a non-selected program disclosed in Chen.

Accordingly, even if Schumann and Chen could be combined, one of ordinary skill in the art would not combine them so as to meet the demultiplexer limitation of independent claim 88.

Therefore, for this reason, independent claim 88 is not unpatentable over Schumann in view of Chen.

Moreover, Schumann does not disclose a multiplexer that multiplexes the encoded frames with the frames of the non-selected video program in the transport stream. Indeed, Schumann does not disclose a non-selected program and, therefore, cannot disclose or suggest multiplexing the encoded selected program with a non-selected program, where the selected program is to be MPEG encoded with an on-screen display.

Chen likewise does not disclose a multiplexer that multiplexing an encoded selected program with a non-selected program, where the selected program is to be MPEG encoded with an on-screen display.

Accordingly, even if Schumann and Chen could be combined, one of ordinary skill in the art would not combine them so as to meet the multiplexer limitation of independent claim 88.

Therefore, for this reason also, independent claim 88 is not unpatentable over Schumann in view of Chen.

Furthermore, Schumann and Chen, whether taken alone or in combination, simply do not deal with the invention of independent claim 88. These references do not disclose or suggest demultiplexing a transport stream containing a selected program and a non-selected program, encoding the selected program with an on-screen display, and then multiplexing the non-selected program and the encoded selected program.

Accordingly, even if Schumann and Chen could be combined, one of ordinary skill in the art would not combine them so as to meet the invention of independent claim 88.

Therefore, for this further reason, independent claim 88 is not unpatentable over Schumann in view of Chen.

Because independent claims 62 and 88 are not unpatentable over Schumann in view of Chen, dependent claims 70, 74, 75 and 81-84 likewise are not unpatentable over Schumann in view of Chen.

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The Examiner's Response – Sections 6 and 7

The Examiner's first response (pages 3 and 4 of the Office Action) to applicants' arguments is that applicants are not permitted to attack the references individually when the rejection is based on a combination of references. Applicants are not sure what the Examiner means by this response. If applicants cannot discuss the references individually, then how can applicants discuss the references?

Moreover, if Schumann does not disclose the buffer of independent claim 62, and if Chen does not disclose the buffer of independent claim 62, it is logical to conclude that one of ordinary skill in the art would not have combined Schumann and Chen to produce an MPEG on-screen display coder that includes the buffer recited in independent claim 62 absent some other reasoning proffered by the Examiner. Since the Examiner has proffered no reasoning to account for the fact that neither Schumann nor Chen discloses the buffer of independent claim 62, it can only be concluded that one of ordinary skill in the art would not have combined Schumann and Chen to produce an MPEG on-screen display coder that includes the buffer recited in independent claim 62.

Similarly, if Schumann does not disclose the
multiplexer of independent claim 62, and if Chen does not
disclose the multiplexer of independent claim 62, it is
logical to conclude that one of ordinary skill in the art
would not have combined Schumann and Chen to produce an
MPEG on-screen display coder that includes the
multiplexer recited in independent claim 62 absent some
other reasoning proffered by the Examiner. Since the
Examiner has proffered no reasoning to account for the
fact that neither Schumann nor Chen discloses the
multiplexer of independent claim 62, it can only be
concluded that one of ordinary skill in the art would not
have combined Schumann and Chen to produce an MPEG on-
screen display coder that includes the multiplexer
recited in independent claim 62.

The Examiner also returns to the argument that
Schumann inherently discloses a buffer. However, as
pointed out above, Schumann does not. Schumann does not
even hint at a buffer.

Moreover, for a buffer to be inherently
disclosed by Schumann, Schumann must adequately enable
the buffer. Schumann, however, does not enable a buffer
that buffers frames of a selected program and frames of a
non-selected program, where the frames of the selected

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program and MPEG encoded with an on-screen display.

Schumann only states that the "set top box 202" can

decode an MPEG-2 compressed video stream broadcast from a

commercial source or from local storage, such as DVD

player 204. Schumann discloses nothing about the

compressed video stream containing plural programs but,

instead, suggests otherwise because it offers a DVD

player as a commercial source.

Furthermore, even if there was somehow some

suggestion of including a buffer in Schumann, there is no

suggestion that the buffer store frames of a selected

program and frames of a non-selected program.

The Examiner responds to this failure of

Schumann by asserting that the set top box of Schumann

also receives non-selected programs because the set top

box can also receive commercial broadcasts. However. as

pointed out above, Schumann discloses nothing about the

compressed video stream containing plural programs but,

instead, suggests otherwise because it offers a DVD

player as a commercial source.

Also, applicants would point out that reference

numeral 202 is twice referred to as a DVD player and once

as a set top box and that reference numeral 204 is once

referred to as a DVD player, once as a set top box, and

four times as a disk. This use of reference numerals is
very confusing. The disclosure at column 4, lines 14-20
adds materially to this confusion by stating that the set
top box 202 (?) contains apparatus for decoding an MPEG-2
compressed video stream broadcast from a commercial
source or from local storage, such as DVD player 204.
Yet Figure 2 of Schumann shows that 202 is a DVD player
and Figure 4 of Schumann shows 204 as the disk.

In view of this confusion, one of ordinary
would not conclude that Schumann discloses a set top box,
but only a DVD player. Indeed, since 202 as shown in
Figure 2 is a DVD player and 204 as shown in Figure 4 is
a disk, it can be surmised that some earlier draft of the
application that resulted in the Schumann patent had a
set top box that was removed before filing.

Frankly, the Examiner's argument that one of
ordinary skill in the art would have combined Schumann
and Chen to provide a system that would buffer frames of
a selected program and frames of a non-selected program,
that would MPEG encode frames of the selected program
with an on-screen display, and that would multiplex the
frames of the non-selected program, the encoded frames of
the selected program, and original frames of the selected
program back together is a rather overt use of hindsight.

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Neither reference shows or suggests the buffering,

encoding, and multiplexing that would have led the person

of ordinary skill in the art to such a system.

The Examiner's second response (page 4 of the

Office Action) to applicants' arguments is that Chen

discloses that the main stream carries a plurality of

programs and therefore some of them can be selected and

others non-selected. However, Chen in fact does not

disclose a buffer that holds frames of both a selected

program and a non-selected program, where frames of the

selected program are encoded by an MPEG encoder with an

on-screen display. Instead, the buffer 480 shown in

Figure 4 of Chen is used only to permit Ads to be

inserted into the stream, and would not have suggested to

one of ordinary skill in the art buffering selected and

non-selected programs so that frames of the selected

program can be encoded with an on-screen display and so

that the non-selected program, the encoded frames of the

selected program, and original frames of the selected

program can be multiplexed together. Therefore, Chen

would not have suggested the use of such a buffer in

Schumann to one of ordinary skill in the art.

The Examiner's third response (page 5 of the

Office Action) to applicants' arguments is that the

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parser 415 of Chen is a demultiplexer. However,
independent claim 88 recites a demultiplexer that
demultiplexes frames of a selected video program from
frames of a non-selected program in a transport stream.
As shown in Figure 4 of Chen, the main stream parser 415
demultiplexes the program clock reference (PCR), the
decoding time stamp (DTS), and the video bit rate R_v from
the main stream. Therefore, even if Schumann and Chen
could have been combined by one of ordinary skill in the
art, the result would have been a parser to parse out the
PCR, DTS, and R_v from the main stream, not a selected
program from a non-selected as required by independent
claim 88.

The Examiner's fourth response (pages 5 and 6
of the Office Action) to applicants' arguments is that
one cannot attack references individually. However,
since neither Schumann nor Chen disclose the multiplexer
recited in independent claims 62 and 88, the combination
of Schumann and Chen would not have led one of ordinary
skill in the art to the inventions of independent claims
62 and 88. If applicants are not permitted to point out
that each reference relied upon by the Examiner has this
defect, then the Examiner is conveniently not permitting
applicants to respond to the rejection.

The Examiner's last response (page 6 of the Office Action) to applicants' arguments is that Chen does indeed disclose a multiplexer. However, neither Schumann nor Chen discloses a multiplexer that selectively passes the frames of non-selected and selected programs, the selected program being defined in independent claim 62 as the program that is MPEG encoded with an on-screen display. Applicants flatly assert that Chen fails to disclose such a multiplexer.

In section 5 of the Office Action, the Examiner rejected dependent claim 64 under 35 U.S.C. §103(a) as being unpatentable over Schumann in view of Chen and further in view of Douche.

As discussed above, independent claim 62 is not unpatentable over Schumann in view of Chen because, inter alia, these references fail to disclose or suggest to one of ordinary skill in the art the combination of a buffer that buffers frames of a selected program and frames of a non-selected program, an MPEG encoder that encodes frames of the selected program with an on-screen display, and a multiplexer that selectively passes the frames of the non-selected program, the encoded frames of the selected program, and the original frames of the selected program.

Douche is directed to a system for including
menus in a digital television signal and likewise does
not suggest, whether taken alone or in combination with
Schumann and Chen, to one of ordinary skill in the art
the combination of a buffer that buffers frames of a
selected program and frames of a non-selected program, an
MPEG encoder that encodes frames of the selected program
with an on-screen display, and a multiplexer that
selectively passes the frames of the non-selected
program, the encoded frames of the selected program, and
the original frames of the selected program.

Therefore, independent claim 62 is not
unpatentable over Schumann in view of Chen and further in
view of Douche. Because independent claim 62 is not
unpatentable over Schumann in view of Chen and further in
view of Douche, dependent claim 64 likewise is not
unpatentable over Schumann in view of Chen and further in
view of Douche.

In section 9 of the Office Action, the Examiner
rejected dependent claims 96, 100, 101, and 107-111 under
35 U.S.C. §103(a) as being unpatentable over Schumann in
view of Chen.

However, because, as demonstrated above,
independent claim 88 is not unpatentable over Schumann in

view of Chen, dependent claims 96, 100, 101, and 107-111

likewise are not unpatentable over Schumann in view of

Chen.

In section 10 of the Office Action, the

Examiner rejected dependent claim 90 under 35 U.S.C.

§103(a) as being unpatentable over Schumann in view of

Chen and further in view of Douche.

As discussed above, independent claim 88 is not

unpatentable over Schumann in view of Chen because, inter

alia, these references fail to disclose or suggest to one

of ordinary skill in the art the combination of a

demultiplexer that demultiplexes frames of a selected

video program from frames of a non-selected program in a

transport stream, an MPEG encoder that encodes frames

with an on-screen display, and a multiplexer that

multiplexes the encoded frames with the frames of the

non-selected video program in the transport stream.

Douche is directed to a system for including

menus in a digital television signal and likewise does

not suggest, whether taken alone or in combination with

Schumann and Chen, to one of ordinary skill in the art

the combination of a demultiplexer that demultiplexes

frames of a selected video program from frames of a non-

selected program in a transport stream, an MPEG encoder

that encodes frames with an on-screen display, and a multiplexer that multiplexes the encoded frames with the frames of the non-selected video program in the transport stream.

Therefore, independent claim 88 is not unpatentable over Schumann in view of Chen and further in view of Douche. Because independent claim 88 is not unpatentable over Schumann in view of Chen and further in view of Douche, dependent claim 90 likewise is not unpatentable over Schumann in view of Chen and further in view of Douche.
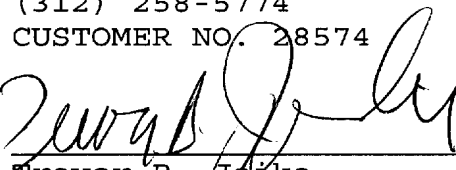
CONCLUSION

In view of the above, it is clear that the claims of the present application are patentable over the references applied by the Examiner. Accordingly, allowance of these claims and issuance of the above captioned patent application are respectfully requested.

The Commissioner is hereby authorized to charge any additional fees that may be required, or to credit any overpayment, to account No. 26 0175.

Respectfully submitted,

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